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## **Minimum Data Documentation Requirements Leaking Underground Storage Tank Sites February 13, 2003**

General requirements applicable to all samples are followed by requirements specific to analysis type.

### *GENERAL REQUIREMENTS FOR ALL SAMPLES*

#### ***Sampling Quality Control Data and Information:***

- Chain-of-Custody
- Date and time each sample was taken
- Map or diagram indicating sample locations
- Any notable observations (color, clarity, texture, reaction with preservatives, etc.)
- Trip blank (or field blank)
- Equipment blank (rinsate blank)
- Identity of field duplicates (a minimum of one duplicate for every 20 or fewer samples)
- Sample for site specific MS/MSD

#### ***Laboratory Quality Control Data and Information:***

- Completed Chain-of-Custody
- Date and time of receipt at the laboratory
- Condition of samples upon receipt at the laboratory
- Sample identification number or designation
- Sample preparation, extraction, cleanup, or digestion method(s) and date(s)
- Analytical method (name, number, and source) and date of analysis
- Final analytical results
- Case narrative (Includes deviations from standard analytical or preparatory procedure(s); quality control problems encountered--whether stemming from system, instrumentation, analyst error, or sample matrix; corrective measures taken; if corrective measures as called for in the method were not taken; results of corrective measures taken; etc.)

## *SPECIFIC REQUIREMENTS BY ANALYSIS TYPE*

### ***Organic Analyses***

#### VOLATILE ORGANIC ANALYSIS (VOA) and SEMIVOLATILE ORGANIC ANALYSIS (SVOA) BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

- Method blank summary sheet with results, including detections
- Detection/quantitation limit for each compound
- Internal standards summary
- Surrogate (System Monitoring Compound) results (concentration of surrogate spikes added, measured concentrations, and % Recoveries of all surrogates) for each sample
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) results (sample concentration for analyte, concentration of spike added, results, % Recovery for each compound, and Relative Percent Difference between MS and MSD for each compound)
- Laboratory Control Sample results

#### ANALYSIS OF VOLATILE ORGANIC COMPOUNDS and SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY (GC) Using Method-Specified Detectors (FID, PID, HECD, etc.) and ANALYSIS OF SEMIVOLATILE AND NONVOLATILE ORGANIC COMPOUNDS BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

- Method of sample introduction (direct injection or purge-and-trap)
- Detection/quantitation limit for each compound
- Method blank summary
- Surrogate recoveries for samples, blanks, and spikes
- Matrix spike/matrix spike duplicate (MS/MSD) analysis or lab duplicates
- Laboratory Control Sample results

#### ANALYSIS OF PCBs BY GAS CHROMATOGRAPHY (GC) WITH ELECTRON CAPTURE DETECTOR (ECD) OR ELECTROLYTIC CONDUCTIVITY DETECTOR (ELCD OR HECD)

- Method blank summary
- Detection/quantitation limit for each compound (in each sample)
- Surrogate recoveries for samples, blanks, and spikes
- Matrix spike/matrix spike duplicate (MS/MSD) analysis or laboratory duplicates
- Laboratory Control Sample results

### ***Metals and General Chemistry Analyses***

#### TOTAL AND DISSOLVED METALS by Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP) or Atomic Absorption Spectroscopy (AA) and GENERAL CHEMISTRY ANALYSES

- Method/sample quantitation limits
- Instrument detection limits
- Blank results
- Matrix spike (sample number of sample spiked, sample concentration for analyte, concentration of spike added, results and % Recovery)
- Matrix spike duplicate or laboratory duplicate (results and Relative Percent Difference [RPD]; if matrix spike duplicate, also report %Recovery)

Laboratory control sample (QC standard or lab-fortified blank: results and %Recovery).

*WEB AVAILABILITY AND ADDITIONAL INFORMATION*

If full QA/QC documentation is requested, the requirements can be found in Appendix 2 of the Risk Integrated System of Closure (RISC) Technical Guide, pages 8-11. The RISC Technical Guide is available on the IDEM web site at:

<http://www.in.gov/idem/land/risc/techguide/riscapp2.pdf>